



MISSOURI. Conservationist

VOLUME 78, ISSUE 4, APRIL 2017 • SERVING NATURE & YOU

[NOTE TO OUR READERS]

The Call of the Wild Turkey

The sounds of spring have finally arrived. There is no better sound this time of year than the distinct and melodious notes of the wild turkey. It calls and hunters come. Like every other turkey hunter in Missouri,

the start of spring turkey season is by far my favorite time of year.

A few weeks ago, I had the privilege of joining 52,000 other impassioned turkey hunters in the annual pilgrimage to the National Wild Turkey Federation's (NWTf) annual convention in Nashville. The joy of the convention is the chance for fellowship with kindred spirits, those that choose to rise early and watch the sun come up in the woods with the hope of hearing the magical gobble of a wild turkey. The meeting is also an incredible opportunity to talk all day about turkeys — turkey habitat, hunting stories, state population numbers, regulations, hunting gear and gadgets, and your favorite turkey call. It is a turkey hunter's dream destination.

While I was there, I also had the chance to talk one evening with a volunteer from Missouri. His dedication to NWTf reflected a deeper commitment to his community as a Boy Scout leader and active volunteer in other conservation organizations. As we were talking about the remarkable efforts of both state wildlife agencies and key partners in bringing back healthy and sustainable wild turkey populations, including how this could not have been done without dedicated volunteers, he used an analogy of a piano keyboard with its 88 keys. He said while beautiful music can be played using only some of



the keys, the more keys you use, the more music you make.

I love the sound of this analogy, especially when I think about NWTf and their volunteers in all 50 states, and how these efforts are only accomplished by playing more keys on the keyboard. It's true for the rest of the conservation community, too. We each have a valuable role to play. No one organization, or individual, or entity can play all the keys by themselves, but when we come together with a common conservation goal, what beautiful music we can make. What big things we can accomplish. What great success stories we can build upon.

So, happy spring, valuable partners! To my fellow turkey hunters, have a safe and adventure-filled hunt.

To the rest, I hope to see you afield doing whatever outdoor activities make music for you.

A handwritten signature in black ink that reads "Sara Parker Pauley".

—Sara Parker Pauley, director



SHARE YOUR COMMENTS ON CONSERVATION AREAS

How are conservation areas important to you and what improvements would you like to see? The Missouri Department of Conservation is updating management plans for more than 1,000 conservation areas all around the state and invites the public to comment on areas important to them. To view area management plans and share comments online, visit mdc.mo.gov/areaplans.

FEATURES

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by Bonnie Chasteen

Dedicated conservation partners help restore and protect Missouri's unique micro deserts

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by Sarah Kendrick

Scientists monitor nests to study the health of birds and changes to the landscape

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by Jake Hindman, photographs by David Stonner

Helping a young hunter get her first turkey from field to table

Cover: Turkey fans on display. Spring turkey season begins with the youth portion April 8–9. Photograph by Noppadol Paothong

📷 500mm lens • f/8 • 1/40 sec • ISO 800

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WHAT IS IT?

Our photographers have been busy exploring the intricacies of outdoor Missouri. See if you can guess this month's natural wonder. The answer is revealed on Page 8.



DEER

Nov. 16 found me in a deer blind near Huntsville in Randolph County. I have never missed an opening day of deer season in Missouri in 70 years. I made up my mind only a big one would do. I saw 29 deer the first day. I never saw a big one. I saw some small, seven and eight points. I never fired a shot. I have taken some nice deer in all of these years, and stored up a lot of memories. I enjoy your magazine. Great work.

L.W. Terry, Clifton Hill

Thanks, MDC. Because of you, we have a great deer population. I love living in Missouri.

Dale Daughetry, via Facebook

WONDERFUL WALLEYE

The article about walleye from the February magazine was especially fascinating [*Wonderful Walleye*; Page 18]. The fact that the fish swim in schools, stay away from bright light, and are active in the winter was both interesting and surprising. I am not much of a fisher, but I am

now hoping to catch a walleye on Stockton Lake some day. Thank you for the enthralling article.

Rosemary William, Stockton

FEBRUARY ISSUE

Wow! *Missouri Conservationist* covers are legendary for their excellence, yet the February cover exceeds that usual high level. I marvel at how the colors and background so exactly match those of the Niangua darter. Editors and photographer Jim Rathert, take a well-deserved bow.

Ken Rosenauer, Country Club

This month's *Conservationist* was the best in years. It seemed to lend itself to education.

Richard Minton, Hamilton

MEMORIES

Charlie Campbell, Ph.D., mentioned the Nature Knights in the February issue of the *Missouri Conservationist* [Letters; Page 2], and that sparked memories of another one-room school in the late 1940s. I was a student at High Hill School in

Macon County, and one day our teacher told us a man was coming after lunch to visit.

Mr. Basil Morlan came and told us of a new organization called the Nature Knights. Students could join and learn about nature and how to make our world a better place by caring for it properly. He had us making scrapbooks and identifying trees, wildflowers, birds, and bugs. We loved it.

The Nature Knights program was an important part of my education. Campbell's letter brought back fond memories of collecting leaves and flowers for the many scrapbooks we made in our little rural school.

Thank you for the *Missouri Conservationist*. We look forward to finding it in our mailbox every month.

Doris Noah, Bucklin

OPPORTUNITIES

I love enjoying the opportunities Missouri conservation has to offer with my 3-year-old son and black Lab. You guys are doing great. Keep up the great work.

Mike Jennings, Bridgeton

TOWER GROVE PARK

Just wanted to let you know how much I enjoyed Danny Brown's article and photos about *Tower Grove Park* [March; Page 16].

Cheryl Balke, Florissant

We just finished reading the March issue of the *Missouri Conservationist*. We especially enjoyed the cover photo of the great horned owlets and the article and photographs of *Tower Grove Park* by Danny Brown. We continue to be impressed by his talent as a photographer and writer.

Wayne and Carol Bean, Union

NATURE ENVELOPES

I have been enjoying your fine magazine for years, and I especially love the gorgeous nature photography. Not wanting to waste those beautiful photos, I turn them into envelopes. Just another way to enjoy nature and spread the love while recycling. Keep up the good work and especially the great full-page nature photography. You never know where they end up.

Jan Canyon, via email



Reader Photo

HICKORY IN SPRING

Eric Davis captured this young hickory tree unfolding new spring leaves in his yard along the Niangua Arm of the Lake of the Ozarks. The tree was one of several 3-foot-tall seedlings Davis planted years ago. The trees are now "8-foot-tall and vigorous," said Davis. He has also planted some pecan trees. "The pecans are also doing well," said Davis. "Including one that was chomped by a passing deer."



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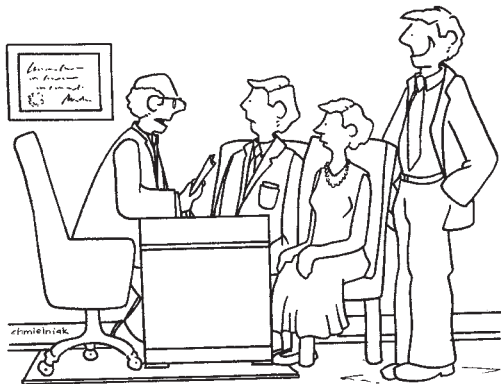
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"... to my son, William, I leave \$300 million in family assets, to my daughter, Alice, the family mansion and yacht, and to my most beloved son, Jack, the directions and title to my secret morel hot spot."

Good morel ground is priceless.

Agent Notes

Where Have You Been?

CONSERVATION AGENTS ARE very active in their communities, and people notice when they are not around. For me, this occurred last summer when another agent and I found some illegal fish traps along the Mississippi River. For the next several days, almost every hour I worked was spent waiting on the banks of the river. We spent many hours sitting and waiting while fighting mosquitos and getting rained on. Finally, one afternoon our patience was rewarded when an individual showed up to check the fish traps. At that point, we made contact, issued him the proper citations, and seized his traps.

When I returned to my normal work routine, I was met with questions from people about my recent whereabouts. "Where have you been hiding?" was a common question. Since I had not been as visible in the community as usual, people noticed something was different.

There are times when agents may not be as visible to the citizens of their counties. They could be enjoying time off, working out of their normal area, or working behind the scenes to protect Missouri's fish, forest, and wildlife resources. So to answer the question, "Where have you been?" my response was, "Working to protect Missouri's resources."



Jason Vaughn is the conservation agent for Lewis County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.

HUNTING & FISHING CALENDAR

| FISHING | OPEN | CLOSE |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------|
| Black Bass | | |
| Impounded waters and most streams north of the Missouri River | All year | None |
| Most streams south of the Missouri River | 05/27/17 | 02/28/18 |
| Bullfrogs and Green Frogs | 06/30/17 at sunset | 10/31/17 |
| Nongame Fish Giggling | | |
| Impounded Waters | | |
| sunrise to sunset | 02/01/17 | 09/14/17 |
| Streams and Impounded Waters | | |
| sunrise to midnight | 09/15/17 | 01/31/18 |
| Paddlefish | | |
| Statewide | 03/15/17 | 04/30/17 |
| Mississippi River | 03/15/17 09/15/17 | 05/15/17 12/15/17 |
| Trout Parks | | |
| Catch-and-Keep | 03/01/17 | 10/31/17 |
| Catch-and-Release | 11/10/17 | 02/12/18 |
| HUNTING | OPEN | CLOSE |
| Bullfrogs and Green Frogs | 06/30/17 at sunset | 10/31/17 |
| Coyote (restrictions apply during April, spring turkey season, and firearms deer season) | All year | None |
| Deer | | |
| Archery | 09/15/17 11/22/17 | 11/10/17 01/15/18 |
| Firearms | | |
| Early Youth Portion | 10/28/17 | 10/29/17 |
| November Portion | 11/11/17 | 11/21/17 |
| Late Youth Portion | 11/24/17 | 11/26/17 |
| Antlerless Portion (open areas only) | 12/01/17 | 12/03/17 |
| Alternative Methods Portion | 12/23/17 | 01/02/18 |
| Groundhog (woodchuck) | 05/08/17 | 12/15/17 |
| Pheasant | | |
| Youth | 10/28/17 | 10/29/17 |
| Regular | 11/01/17 | 01/15/18 |
| Quail | | |
| Youth | 10/28/17 | 10/29/17 |
| Regular | 11/01/17 | 01/15/18 |
| Rabbit | 10/01/17 | 02/15/18 |
| Squirrel | 05/27/17 | 02/15/18 |
| Turkey | | |
| Archery | 09/15/17 11/22/17 | 11/10/17 01/15/18 |
| Firearms | | |
| Youth | 04/08/17 | 04/09/17 |
| Spring | 04/17/17 | 05/07/17 |
| Fall | 10/01/17 | 10/31/17 |
| Waterfowl | see the <i>Waterfowl Hunting Digest</i> or short.mdc.mo.gov/ZZx | |

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, *The Fall Deer & Turkey Hunting Regulations and Information*, *The Waterfowl Hunting Digest*, and *The Migratory Bird Hunting Digest*. For more information, visit short.mdc.mo.gov/ZZf or permit vendors.

Ask MDC

Address: PO Box 180, Jefferson City, MO 65102-0180
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Luna moth

Is it true luna moths do not eat and have no mouth parts?

Yes. As with all Saturniidae — a Lepidoptera family that includes some of the largest moth species — luna moths (*Actias luna*) emerge from their cocoons solely to mate, living approximately one week.

With wingspans of up to 4.5 inches, these showy, pale-green moths often attract attention for their beauty and size.

Lunas are usually found near deciduous woodlands where walnut, hickory, persimmon, and sweet gum trees grow. Depending on the climate where they live, lunas produce between one to three generations, or broods, each year. Missouri has three broods, with adults flying from early April through August. Around midnight, females call males by emitting pheromones, which the males' highly sensitive, featherlike

antennae can pick up. One way to differentiate between females and males is to examine their antennae, since males' are bushier.

Although short-lived, they are common in Missouri and can often be seen gathered near porch lights. Unfortunately, populations have declined in some areas due to habitat destruction and increased use of bright lights at night, which can disrupt mating cycles.

I've heard bobcats can wreak havoc on wild turkeys and will often stalk a single flock, picking birds off one by one. Is there research available explaining how bobcats impact turkey mortality?

Bobcats are one of the primary predators of wild turkeys. However, bobcats have

a diverse diet and turkeys represent a small percentage of their overall intake. In a study in southern Iowa, birds — all birds, not just wild turkeys — were found in only 2 percent of bobcat stomachs. Common items found in this study were rabbit, mice, voles, and squirrels.

Closer to home, a study of the food habits of 41 bobcats in Missouri showed nearly 70 percent of the cats' diets consisted of rabbits. Squirrels and white-tailed deer — some of which was likely carrion — were the next-largest groups to be preyed upon, at about 20 percent collectively. In the Missouri study, wild turkeys comprised less than 8 percent of the cats' diets.

This is because turkeys are hard to catch. Not only do they have keen eyesight and hearing, they also can fly as fast as 55 miles per hour. They run quickly, too.

So, although bobcats can and do kill wild turkeys, they tend to be opportunistic predators that rely upon small mammals to survive. Loss of habitat and unfavorable weather during the nesting and brood-rearing seasons are still the main foes of wild turkey populations.

What can I do to entice more indigo buntings into my yard?

One of the most abundant birds in Missouri, indigo buntings arrive in Missouri toward the end of April, making late spring a good time to entice them to your yard. They are particularly attracted to small thistle or nyjer seeds. They also eat insects, so live mealworms may bring them in as well.



Male indigo bunting



Did You Know? Missouri forests cover about one-third of the state and provide outdoor recreation, wildlife habitat, natural beauty, and watersheds for streams and rivers. Missouri forests also provide employment for more than 44,000 people who convert trees into essential products. Get more information at mdc.mo.gov/forest.

Celebrate Missouri Trees During Arbor Days

The Missouri Department of Conservation encourages Missourians to celebrate the value of Missouri trees and forests during Arbor Days in April by planting native trees and practicing proper tree care.

Missouri Arbor Day is Friday, April 7. Missouri has been observing the state's official Arbor Day on the first Friday in April since 1886 when the general assembly declared that day be set aside for the appreciation and planting of trees. National Arbor Day is recognized on the last Friday of April, which is April 28.

Find information on backyard tree care — including types of trees for urban and other landscapes, selecting the right tree for the right place, planting tips, watering and pruning info, and more — at mdc.mo.gov/tree-health.

MDC's George O. White State Forest Nursery near Licking offers Missouri residents a variety of low-cost native tree and shrub seedlings for reforestation, windbreaks, erosion control, and wildlife food and cover. Orders are accepted from Nov. 1 to April 15 every year. For more information, visit mdc.mo.gov/seedlings.

Communities around the state also hold local Arbor Day activities. For more information on Arbor Day and Missouri's Tree City USA communities, visit the Arbor Day Foundation at arborday.org.

Spring Turkey Hunting

Missouri spring turkey season starts with the youth portion April 8 and 9, followed by the regular portion April 17 through May 7. Find details on hunting regulations, harvest limits, allowed methods, required permits, and other related information in the *2017 Spring Turkey Hunting Regulations and Information* booklet, available where permits are sold. Get more information on turkey hunting at short.mdc.mo.gov/Z3h.

Buy Missouri hunting permits from vendors around the state; through MDC's free mobile apps, MO Hunting and MO Fishing, available for download through Google Play for Android devices or the App Store for Apple devices; or online at mdc.mo.gov/buypermits.

MDC Offers New Permit Card

Beginning April 1, MDC will offer Missouri hunters, anglers, and trappers its new permit card. The new plastic cards are another alternative to MDC's paper and electronic permits.

As new permits are purchased and old ones expire, the updated information is automatically accessible through the one-time-purchase cards. Conservation agents can scan users' cards to verify active permits. Cardholders can verify their active permits online at mdc.mo.gov/buypermits, through permit vendors around the state, through MDC's MO Hunting or MO Fishing mobile apps, or by contacting an MDC office.

Choose from four nature-inspired background images: bass, buck, mallard duck, or bluebird.

Permit users can buy the new permits cards for a one-time fee of \$2 online at mdc.mo.gov/buypermits, from permit vendors around the state, or through the MDC MO Hunting and MO Fishing free mobile apps. Buyers will get a confirmation document at the time of purchase and the plastic permit card will be mailed.

Because of permit-notching and Telecheck requirements for deer and turkey hunting, the new card cannot be used for deer and turkey hunting permits. The new card cannot be used as proof of daily trout tags at trout parks, so anglers will still need to purchase and wear their daily trout tags. The new permit card cannot be used to show possession of a federal duck stamp, so waterfowl hunters must still carry the document verifying the purchase of a federal duck stamp or the actual stamp. The new permit cards do not replace commercial permits and lifetime permits, which must be purchased through MDC's Permit Services Unit by calling 573-751-4115.

The new card replaces the existing Heritage Card, and Heritage Cards will no longer be issued. Existing Heritage Cards will still be valid for hunter-education verification, purchasing permits, and discounts, but will not be legal as a permit. As with the MDC Heritage Card, permit cardholders receive a 15 percent discount on merchandise purchased at MDC facilities and online at mdcnatureshop.com. MDC Hunter Education graduates will receive permit cards instead of the discontinued Heritage Card.



CONSERVATION COMMISSION ACTIONS

The February Commission meeting featured presentations and discussions regarding permit cards, the Enterprise GIS and Infrastructure Asset Management System, forest management on conservation areas, Fiscal Year 2017 mid-year review of revenue and expenditure trends, shooting ranges and the hunter education program, and Design and Development Division report. A summary of actions taken during the Feb. 16–17 meeting for the benefit and protection of fish, forests, and wildlife, and the citizens who enjoy them includes:

- » **Recognized** the department's Waterfowl Managed Hunt System team for receiving the 2016 Innovation Award from the Organization of Fish and Wildlife Information Managers for their development of MDC's new Waterfowl Managed Hunt System.
- » **Approved** plans for 80th Anniversary Open House Forums to provide opportunities for public engagement.
- » **Approved** recommendations for regulation changes identified during the annual review of the *Wildlife Code of Missouri*.
- » **Rejected** bids received for construction of the Shepherd of the Hills Fish Hatchery Conservation Center Replacement and Storage Buildings Improvements Project in Taney County.
- » **Approved** the purchase of 280 acres in Shannon County as an addition to Sunklands Conservation Area (CA).
- » **Approved** the purchase of 671 acres in Dallas County as a new conservation area.
- » **Approved** the sale of 4.5 acres of Neosho Towersite in Newton County.
- » **Approved** the donation of 80 acres in Buchanan County as a new conservation area.
- » **Approved** the exchange of 13 acres of Flight Lake CA located in Vernon County for a 13-acre tract in Vernon County as an addition to Flight Lake CA.

The next Conservation Commission meeting is April 5–7. For more information, visit short.mdc.mo.gov/Zze or call your regional Conservation office (phone numbers on Page 3). To watch a Commission meeting via Livestream, visit short.mdc.mo.gov/Z3H.

MDC and CFM Thank Hunters for Sharing the Harvest

MDC and the Conservation Federation of Missouri (CFM) thank the 4,280 Missouri deer hunters who donated 198,277 pounds of venison to the state's Share the Harvest program this past deer season. The donated deer meat will help feed hungry Missourians all across the state.

Share the Harvest is coordinated by MDC and CFM. Deer hunters donate their extra venison to participating meat processors who grind the

deer meat into 1 pound packages. The packaged venison is then given to food banks and food pantries for distribution to Missourians in need of food assistance. Since the program was started in 1992, Share the Harvest has provided about 3.7 million pounds of lean, healthy venison to hungry Missourians.

Processing fees are covered entirely or in part by local and statewide sponsors, including MDC, CFM, Shelter Insurance, Bass Pro Shops, Missouri Chapter of Safari Club International, Missouri

State Chapter of the National Wild Turkey Federation, Midway USA, Inc., Missouri Food Banks Association, United Bowhunters of Missouri, Missouri Trappers Association, Missouri Hunter Education Instructors Association, and the Walmart Foundation.

For more information on Share the Harvest, visit short.mdc.mo.gov/Zoz.

Help Prevent Wildfires

MDC reminds people that a combination of strong winds, low humidity, dry conditions, and warming temperatures this time of year increases the potential for unexpected wildfires. According to MDC's Forestry Division, the main cause of wildfires is improper burning of debris such as trash and brush piles.

Each year, MDC staff work with fire departments around the state to help suppress numerous wildfires that can consume thousands of acres. The department urges landowners, hunters, campers, and others in the outdoors to help prevent wildfires and offers the following tips.

OUTDOOR BURNING

- » Do not conduct outdoor burning during times when grasses, brush, and other fire fuel are very dry, humidity is low, and weather is windy. Dry fuel — combined with high temperatures, low humidity, and high winds — makes fire nearly impossible to control.
- » Check with local fire departments regarding local burn ordinances or burn bans that may be in place.
- » A person who starts a fire for any reason is responsible for the damage it may cause.
- » Done properly, prescribed fire can be a beneficial tool to improve land for wildlife habitat and grazing. For more information on using prescribed fire as a land-management tool, visit short.mdc.mo.gov/Zo9.

DRIVING OFF ROAD

- » Wildfires can start when fine, dry fuel such as grass comes in contact with catalytic converters on motor vehicles.
- » Think twice before driving into and across a grassy field.
- » Never park over tall, dry grass or piles of leaves that can touch the underside of a vehicle.



WHAT IS IT?

American Bullfrog | *Lithobates catesbeianus*

American bullfrogs, Missouri's largest and most aquatic species of frog, range in color from green to olive to brown. The average size is 3 to 6 inches, but they have been known to reach 8 inches. Their call is a deep, sonorous "jug-a-rum, jug-a-rum" that can be heard from half a mile away or more. Found statewide, they spend most of their time in or near lakes, ponds, rivers, large creeks, sloughs, and permanent swamps or marshes. The size and age of a frog, the season, and the type of habitat influence their diet. In general, foods include insects, spiders, crayfish, fish, amphibians, birds, and even small mammals. Bullfrogs commonly eat other frogs, and they don't hesitate to eat their own kind. Bullfrogs are active from late March to October, and overwinter by burrowing in the mud of rivers or ponds. Breeding is in mid-May to early July, at which time males become territorial and physically aggressive with each other. Eggs are laid in shallow water in a wide, floating mass. Females can lay over 20,000 eggs per clutch, which hatch in 4–5 days. Tadpoles turn into froglets in about 11–14 months, but adult size isn't reached for another 2–3 years. —*photograph by Noppadol Paothong*

DID YOU KNOW?

We help people discover nature.

- » When driving vehicles off road, regularly inspect the undercarriage to ensure that fuel and brake lines are intact and no oil leaks are apparent.
- » Always carry an approved fire extinguisher on vehicles that are used off road.
- » Check for the presence of spark arresters on ATV exhausts.

MAKING A CAMPFIRE

- » Clear a generous zone around fire rings. When humidity is low and wind is high, debris can become tinder for a stray spark or ember.
- » Store unused firewood a good distance from the fire.
- » Never use gasoline, kerosene, or other flammable liquid to start a fire.
- » Keep campfires small and controllable.
- » Keep fire-extinguishing materials, such as a rake, shovel, and bucket of water, close by.
- » Never leave a campfire unattended! Extinguish campfires each night and before leaving camp, even for a few moments.

SMOKERS: PRACTICE EXTRA CAUTION

- » Extinguish cigarettes completely and safely and dispose of butts responsibly.

DON'T DELAY CALLING FOR HELP

- » Call 911 at the first sign of a fire getting out of control.

REPORT FOREST ARSON

- » Many wildfires are set by vandals.
- » Help stop arson by calling Operation Forest Arson at 800-392-1111. Callers will remain anonymous and rewards are possible.

For more information on preventing wildfires, go online to short.mdc.mo.gov/Z3F.

Support for Volunteer Fire Departments

In cooperation with the U.S. Forest Service, MDC provided more than \$344,000 in grants to 158 volunteer fire departments last year for protective clothing, equipment, and training. MDC also obtained more than \$4 million in equipment from federal government programs for volunteer fire departments and provided wildfire-suppression training to more than 400 Missouri firefighters.

It's Morel Season

In mid-April, Missouri's most popular mushroom, the morel, begins popping up on forest floors. Hunting these distinctive, delicious fungi is a great way to explore nature and deepen connections with friends, family, and Missouri's culinary heritage.

If you're new at hunting morels, play it safe. Tag along with an experienced mushroom hunter, who can show you the difference between morels and their poisonous cousins, such as amanitas and false morels.

We also recommend carrying a good field guide, like *Missouri's Wild Mushrooms*. This full-color guide features photographs and detailed descriptions of 102 mushroom species. Buy it at any MDC regional office or nature center. Or order it online for \$14, plus tax and shipping, at mdcnatureshop.com.



» When to Hunt Morels

- Mid-April to mid-May (in northern Missouri)
- The day following a warm rain
- When the average daily temperature climbs into the 50s

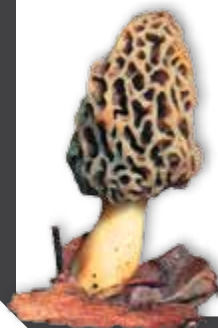
» Where to Hunt Morels

Best locations are moist woods, river bottoms, and south-facing slopes early in the season and on north-facing slopes later on. Morels are often found near elm trees — the older the better, and recently dead is the best. Also check near ash, basswood, or cherry trees. Look in old orchards, burned areas, and recently logged areas.

Most public lands allow mushroom collecting for personal consumption (noncommercial purposes), and no permit is required. In general, conservation areas allow mushroom collecting, although several nature centers and MDC headquarters in Jefferson City do not. Before you travel, check area rules at mdc.mo.gov/atlas.

» What to Look For

A thimble-shaped, deeply dimpled fungus varying in color from gray to tan to yellow. Morels average 3–4 inches tall, but they can become quite large — up to a foot tall. The caps of true morels are attached to the stem, and the whole mushroom is hollow from top to bottom.



» ID, Prepare, Taste, and Enjoy

Never eat a wild mushroom unless you're certain of its identity. Always cook wild mushrooms before tasting them. Slice morels in half, clean, and soak overnight in salt water. Rinse well and drain, and then sauté lightly with olive oil or butter. Find more mushroom recipes at short.mdc.mo.gov/Z3U.



Safeguarding Our Glades

NOPPADOL PAOTHONG

Compass plant blooms on a privately owned glade in southwest Missouri.

A large, vibrant yellow flower with many petals is the central focus of the image. It is set against a background of a desert landscape with green shrubs and hills in the distance. The flower has a dark center with visible stamens. Below the main flower, there are several green buds on a stem.

Dedicated conservation partners help restore and protect Missouri's unique micro deserts

BY BONNIE CHASTEEN

AS NATURE LOVERS, WE MISSOURIANS TAKE PRIDE in our state's mysterious caves, glorious forests, and mighty rivers, but did you know the Show-Me State also treasures a collection of tiny deserts? If you've ever seen a roadrunner, scorpion, or tarantula along a Missouri trail, you were probably hiking through a glade.

Bedrock Survival

Glades are small, rocky openings on hills in woodlands and prairies. They form where layers of rock jut through the shallow soil. In Missouri, glades are scattered throughout much of the southern part of the state. Some Missouri plants and animals are strictly adapted to glade habitat and depend on it for survival. In fact, different kinds of glade plants are associated with the five different kinds of bedrock that lie underneath. Igneous, sandstone, and chert glades support plant, lichen, and moss species that prefer acidic substrates, while plant communities on limestone and dolomite glades are more adapted to alkaline soils.

Tough but Sensitive

You could say that glade life thrives on hardship. In the summer growing season, plants and animals face high temperatures, intense solar radiation, and dry conditions. In the spring, winter, and fall, however, they deal with saturated soils. In addition to hot summers and wet

winters, wildfires swept through glades during presettlement times, setting back invasive woody plants like eastern red cedar. Today we use prescribed fires to keep the woody plants at bay. In spite of these extreme conditions, drought-adapted wildflowers, warm-season grasses, and a specialized suite of wildlife flourish in Missouri's glades. Animals strongly associated with glades include the collared lizard, Missouri tarantula, and the small-footed *Myotis* bat, which sleeps under rocks or tree bark during the day. Many bird species including Bachman's sparrow, yellow-breasted chat, and painted bunting frequent our micro deserts, too.

But there are five big threats that even tough glade plants and animals can't survive. The first is overgrazing, which destroys soft-stemmed plants and increases erosion. The second is continual fire suppression. Without periodic fire, thick stands of trees and shrubs (especially red cedar) crowd out glade-loving wildflowers and grasses — along with the wildlife that need them for food, cover, and nesting habitat. Throw in invasive nonnative species like sericea lespedeza and tall fescue that form dense stands, and the area's natural diversity is further reduced. Add development and poaching of reptiles and other wildlife to these impacts, and you've got a natural community in dire need of help.

Fortunately, landowners like Don and Art Kossman are working with their natural resource management agencies to identify, restore, and sustain glades on their land.



Habitat HEROES



Left to right, Ben and Mallorie Coffee join their grandfather Art Kossman, NRCS Resource Conservationist Rob Morrow, and Art's brother Don for an exploration of the Kossmans' restored igneous glade in St. Francois County.

The Kossman brothers' property lies within the St. Francois Knobs Glades and Woodlands Conservation Opportunity Area about an hour southeast of St. Louis. Their large acreage comprises igneous flat-woods, woodland, and glade natural communities. Starting in 2007 and continuing today, the Kossmans have worked with MDC and the Natural Resources Conservation Service (NRCS) to manage and restore their natural communities. "It's all about diversity," Don Kossman said during a visit to their land last fall.

"Everything has a place and a purpose," he said. "Art and I love to come here with our families to hunt, target-practice, and watch wildlife. We've seen flocks of up to 20 turkeys and bucks with big racks."

Since 2007, the Kossman brothers have worked with MDC private land conservationists and NRCS's Lead Resource Conservationist Rob Morrow to implement prescribed burns, remove eastern red cedar, and thin hardwood brush on large sections of woodland and glades.

"For glades, the best thing to do is control the woody encroachment and get fire back on the land," Morrow said. "We cut the trees to remove the shade and let sunlight down to the ground. When natural glade communities are intact, they bounce right back when you take off the woody pressure. The native grasses and wildflowers were already here, so we didn't have to plant."

Glade and woodland restoration on the Kossman property has been made possible in part with financial assistance through the federal Environmental Quality Incentives Program (EQIP), with matching funds from MDC. "Funding through EQIP helped the Kossmans offset the cost to hire contractors to complete the treatments," Morrow said.

"I cannot emphasize enough how much we appreciate the assistance from NRCS and the Missouri Department of Conservation," Don said. "The wildlife population, especially turkey, deer, birds, lizards, and rabbits on our property has greatly increased with Rob's help."

Do You Have a Glade?

Don and Art Kossman's igneous glade restoration in St. Francois County is an excellent example of landowners teaming up with conservation agencies to restore and sustain natural communities. If you think your land has an acre or more of natural glade, give your regional office a call. Your county's private land conservationist can help you determine if you have glade habitat, develop a restoration plan, and find funding to help offset the costs of management. Find regional office phone numbers on Page 3.

Conserving Glades Wherever They Occur

In Missouri, private and public partners like the Kossmans and Morrow are reintroducing prescribed fire and clearing encroaching trees like eastern red cedar from local glade conservation opportunity areas (COAs). These are places where people can do the most good for glade habitats — and the native plants and animals that depend on them.

Igneous Glades

Igneous describes rocks like rhyolite or granite that formed from lava as much as 1.5 billion years ago. These glades occur on the shoulders and back slopes of knobs and mountain domes. One igneous glade plant of greatest conservation need is Mead's milkweed, a Missouri state-endangered and federally threatened species.

Private landowners and natural resource management agencies are working to restore igneous glades in the St. Francois Knob Glades and Woodlands COA.

Sandstone Glades

These are associated with open woodland, cliff, and prairie natural communities. Sandstone glades are home to the Missouri state-endangered and federally threatened geocarpon, a kind of wildflower.

Conservation partners, including the Missouri Botanical Garden, MDC, Missouri Master Naturalists, U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service (USFWS), are working to conserve Bona Glade Natural Area (NA) located within a sandstone woodland/sandstone cliff complex overlooking Stockton Lake. Woody plant removal and prescribed fire have increased numbers of geocarpon there.

Chert Glades

Rockbound and drought-prone, these globally unique glades have been found only in southwest Missouri and northwest Arkansas, but they may also occur in southeast

Kansas and northeast Oklahoma. With only a few scattered acres remaining in this small region, they are Missouri's most limited type of glade, and are therefore considered imperiled.

At Wildcat Glades Conservation and Audubon Center next to Wildcat Glade NA, the City of Joplin, MDC, and the National Audubon Society are safeguarding 27 acres of chert glades. Other partners include MMN, the Ozark Gateway Audubon Chapter, Master Gardeners, and many local universities, schools, and businesses.

Limestone Glades

These natural areas occur on steep slopes above streams and on gently rolling hills along the west and north borders of the Ozarks. They support wildflowers, grasses, and sedges interspersed with groups of stunted trees. Limestone glades on the Springfield plateau are home to the state-endangered Missouri bladderpod.

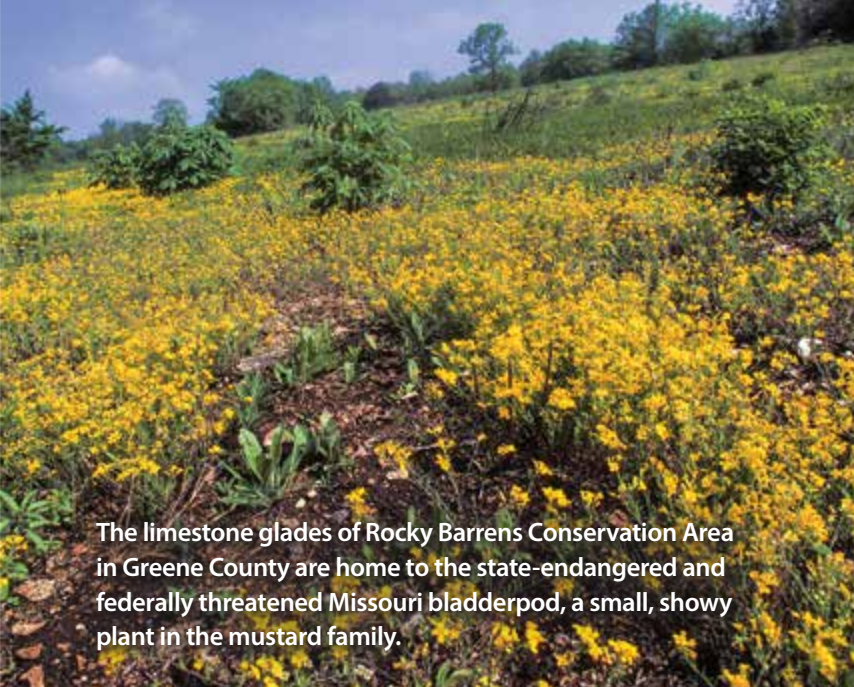
Danville Conservation Area (CA) lies within the Missouri River Hills Priority Geography in central Missouri. Conservation partners include the Missouri Bird Conservation Initiative, Missouri Conservation Heritage Foundation, MDC, NRCS, National Wild Turkey Federation, Quail Forever, Quail and Upland Wildlife Federation — Ruffed Grouse Chapter, and USFWS. Restoration efforts have benefited glade species like prairie dandelion, six-lined racerunner, and blue-winged warblers.

Dolomite Glades

These kinds of glades look like prairies with lots of exposed dolomite bedrock, which is a kind of limestone. Where they occur in the southwestern part of the state, they harbor unique wildflowers like the Missouri cone-flower and uncommon wildlife like the greater roadrunner and the Texas mouse, both largely restricted to this natural community in Missouri.

The 40,000-acre Angeline CA in the heart of Missouri's Ozark Mountains features both igneous and dolomite glades. Working with private and nonprofit partners, such as AmeriCorps St. Louis, and using commercial timber sales, area managers have removed red cedar and applied prescribed fire to the area's glades. Treatments have benefited six-lined racerunners, prairie warblers, and the Ozark-restricted Bush's skullcap. ▲

Bonnie Chasteen is Missouri Conservationist's associate editor. A former desert dweller, she enjoys hiking and learning about Missouri's amazing glades.



The limestone glades of Rocky Barrens Conservation Area in Greene County are home to the state-endangered and federally threatened Missouri bladderpod, a small, showy plant in the mustard family.



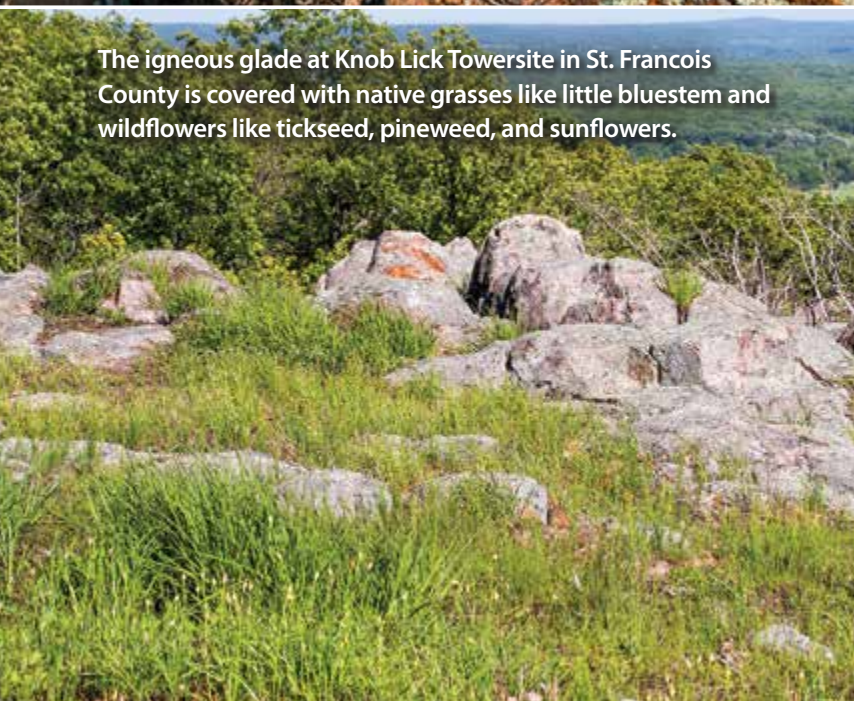
The White River Balds Natural Area in Taney County conserves some of the largest and finest dolomite glades in the Missouri Ozarks.



A kind of succulent, the beautiful rock pink thrives in the acid soils of the rare chert glades at Wildcat Glade Natural Area.



The lichen-covered sandstone glades at Bona Glade Natural Area in Dade County provide habitat for the exquisitely camouflaged lichen grasshopper.



The igneous glade at Knob Lick Towersite in St. Francois County is covered with native grasses like little bluestem and wildflowers like tickseed, pineweed, and sunflowers.

Glades

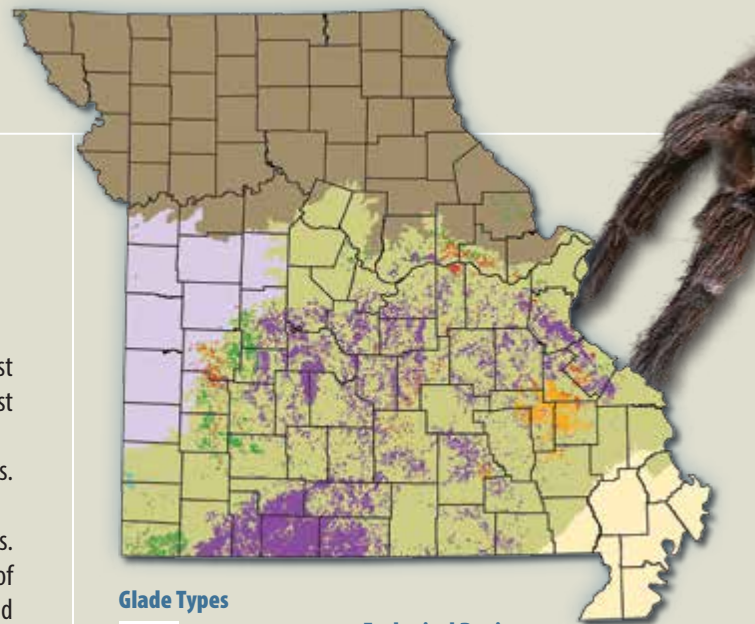
Missouri's Glade Types

In Missouri, the most abundant glade habitat is found in the Ozark Highlands eco region of the state. However, a few glades are located in both the Osage Plains and Central Dissected Till Plains eco regions.

- **Chert glades** are globally unique. They have been found only in southwest Missouri and northwest Arkansas, but they may also occur in southeast Kansas and northeast Oklahoma.
- **Dolomite glades** in general can be found across most of the Ozark Highlands.
- **Igneous glades** are limited to southeast Missouri.
- **Limestone glades** are found along the west and north borders of the Ozarks.
- **Sandstone glades** in Missouri may be found scattered throughout much of the Ozark Highlands, with more dense concentrations on the west, north, and northeast sides of the Ozarks.

Walk Lightly and Take Nothing but Photos

When you visit Missouri's public glades, you will be tempted to turn over rocks or pick the beautiful flowers. When you feel the urge to take a souvenir, take a photo instead. It will remind you of the great time you had, and it will help you protect one of our state's remaining mini deserts. Learn more about Missouri's glade natural communities at short.mdc.mo.gov/Z3r.



Glade Types



Ecological Regions



Not every glade in Missouri has been mapped, but many have. To see if you may have glades on your property, visit the Conservation Biology Institute's interactive map of natural glades in Missouri and Arkansas at short.mdc.mo.gov/Z3y.

Visit These Glade Hot Spots

Igneous Glades

Ketcherside Mountain CA in Iron County and Hughes Mountain NA in Washington County have good examples of igneous glades.

Sandstone Glades

Explore the sandstone glades at Graham Cave State Park off I-70 between Columbia and St. Louis.

Chert Glades

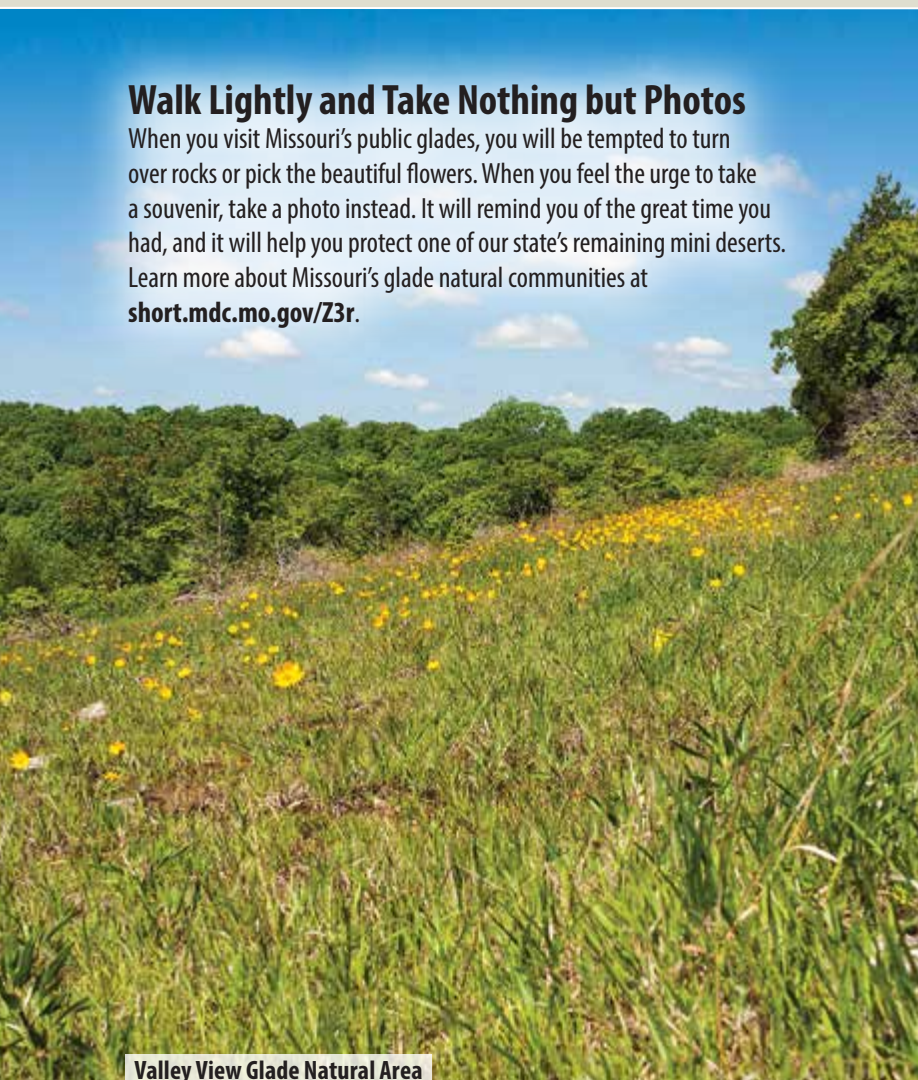
Wildcat Glade NA in Joplin's Wildcat Park is a great place to see a chert glade.

Limestone Glades

In Greene County, visit Rocky Barrens CA or the Springfield Conservation Nature Center.
In Kansas City, stop by Burr Oak Woods CA.

Dolomite Glades

Visit Victoria Glade CA in Jefferson County near St. Louis, Ha Ha Tonka State Park near the Lake of the Ozarks, or Henning CA in Branson.



Valley View Glade Natural Area

Plants and Animals of
Greatest Conservation Need



Missouri tarantula



Greater roadrunner



Painted bunting



Eastern collared lizard



Geocarpon



Fremont's leather flower

MISSOURI TARANTULA, GREATER ROADRUNNER, PAINTED BUNTING, EASTERN COLLARED LIZARD:
NOPPADOL PAOTHONG; FREMONT'S LEATHER FLOWER, GEOCARPON: JIM RATHERT

What's in a Nest?

Scientists monitor nests to study the health of birds and changes to the landscape

I remember the day I learned that finding bird nests for research studies was a job.

“Wait — what?!” I asked, incredulous. “Let me get this straight, I walk around in the woods all day and follow bird clues to find nests?”

It's true — these jobs exist around the world. For my first bird field job, I was charged with finding nests of Acadian flycatchers in the forests of central Missouri. We followed the small gray birds around the forest, hoping they would lead us to their nests. We looked closely with binoculars to see if their beaks held grass (a sign of nest-building behavior) or were crammed full of insects (a sign they were feeding nestlings). I felt like I'd been let in on a secret. Each nest that I found seemed like a hidden treasure as I recorded its success or failure over the following days or weeks. A nest was deemed successful if young survived from eggs to fledging or left the nest. Conversely, a nest failed if the eggs or nestlings did not make it to fledging, most often due to being eaten by a predator or destroyed by a storm or other weather.

By Sarah Kendrick



Scissor-tailed flycatchers



Scissor-tailed
flycatcher nestlings
spend 14-16 days in the
nest before fledging

PHOTOGRAPHS BY NOPPADOL DAOTHONG



Have you ever spotted a nest in a tree or shrub in your yard and wondered what kind of bird built it? Did you watch the nest for a while, waiting for the bird to return? Maybe you've seen a woodpecker fly into a tree hole or flushed a hen turkey off of her eggs. If you've ever watched a bird build a nest, noticed a bird sitting on a nest for a week or two, or seen one poking fat caterpillars inside a nest to squawking nestlings, then you've monitored a nest like an avian ecologist, or bird scientist.

Red-shouldered hawk nestlings



What Do Birds Tell Us?

Birds are not only beautiful and fun to watch, their activities also give scientists clues about the habitats they use.

Most birds need three basic things for survival — food, water, and cover, or places to hide or find shelter. During the breeding season, they also need nesting sites — shrubs if they nest in thick, scrubby areas; large trees if they nest in the canopy or tree cavities; or a wetland with just the right amount of vegetation to tuck their nests among the cattails. Birds have the ability to quickly evaluate an area for their basic needs. If they don't find the resources they need in an area, they can fly to find them somewhere else.

The power of flight allows birds to travel long distances to search for habitat that suits their needs relatively quickly. Most mammals, reptiles, and amphibians are confined to the ground and do not have that ability or aerial perspective to assess the area. Birds' quick responses to environmental change can alert scientists and managers to changes in local habitat quality.

American robins



PHOTOGRAPHS BY NOPPADOL PAOTHONG

Habitat Selection

The landscape around birds is constantly changing. Managers remove trees for harvest to make way for development or to improve and restore grassland habitat. Swampy wetland areas can be drained, or an old farm can be reclaimed and restored to native habitat. Different birds live in all of these types of habitat, so they must constantly adapt to changes around them and figure out what areas provide their basic needs.

For example, if a land manager or landowner has an overgrown forested area that historically was an open savanna and she wants the land restored, she will remove some trees to open the canopy and use prescribed fire every few years. Tree removal and fire are management tools that maintain a lush vegetative layer so more sunlight reaches the ground. The vegetation on the ground creates food and nesting sites for ground-nesting and shrub-nesting birds, while still maintaining habitat for tree-nesting birds. If a biologist is interested in the responses of wildlife, like birds, to this management, she can count birds or monitor their nests before and after the changes to gauge the impact on the bird community. If the bird counts show bird populations appear to increase or decrease, this can help the land manager determine whether the management is helping or hurting different species. Also, by creating savanna habitat from overgrown forest, managers give birds like prairie warblers or red-headed woodpeckers, species that would not use an overgrown forested area, a type of habitat they can use. Scientists and managers use monitoring to track birds' responses to these land-use changes.

Scientists can also monitor bird nests to learn about the quality of a habitat. If a high proportion of bird nests in an area survive and produce lots of young, it can mean the parents are able to find better resources such as food, water, and healthy vegetation and nesting sites. Conversely, if many of the nests produce few fledglings and survival is low, that could be a sign to scientists and land managers that the area's resources may not be as healthy as they could be.

How to Find an American Robin Nest

Nest searching is not an activity for those with a short attention span, but if you've followed my story this far, you might have what it takes. Patience is key. There are

Want to Monitor Nests for Science?

NestWatch is a volunteer nest-monitoring program by the Cornell Lab of Ornithology. Participants can keep tabs on nests in their yard or on their property and send in the data. The program has a strict Code of Conduct about being respectful of birds' nests and a quiz that you must pass before getting started. To sign up, visit nestwatch.org.



NOOPADOL PAOTHOONG

Least bittern

generally two ways to find a nest — by watching the parents and by looking in the spots where the bird normally nests. When robins build nests, they collect mud, grass, and some sticks. If you see a robin picking up mud or grass and flying immediately up to a tree, see if it goes to a nest. Look in the trees in your yard. Typically, robins nest near clumps of leaves in the top half of medium-to-large trees. If you normally see robins in your neighborhood or yard, there's a good chance you may spot a nest.

Nest Etiquette

You can look for robin nests in your yard, but always be careful not to bother the parents, nestlings, or the nests in any way. This could change the parent's behavior and may draw a potential predator's attention to the nest. Blue jays and American crows will eat bird eggs or the nestlings of smaller birds. They are smart birds that can watch behaviors to lead them to a nest, so always view nests from a distance. Generally, birds are aware of their surroundings and on the lookout for potential threats or predators, especially when they are nesting, so you don't want to be the reason that their nest fails. The breeding season is a very important time of year for birds, and a human walking around their nest may not be a regular occurrence, so be aware of the parents' reactions.

Birds may stop their nest-building, feeding, or other nesting behaviors if you are too close to the nest. If the parents squawk at you, call over and over, or stop what they're doing and watch you closely from a perch, move back to a distance that lets them calm down and stop calling. If you stay near the nest, the parents see you as a threat and won't want to reveal where the nest is by sitting on their eggs or feeding nestlings. Sometimes the distance you have to move back may seem far, but that's where binoculars come in handy. Binoculars allow you to view a bird's nest from a distance without disturbing the adults or altering their parental care or behavior.

If you happen to find other nests closer to the ground in your yard or on your property, don't move branches out of the way to see into a nest. Even small changes to the bird's nesting site may make the area more visible to a predator that may be looking for eggs or nestlings to eat. Moving branches or breaking a twig or two around the



Eastern towhee eggs



Indigo bunting eggs (white) in a nest parasitized by a brown-headed cowbird

MELISSA ROACH

NOPPADOL PAOTHONG

Nest Diversity

The best part about birds is their diversity, and this applies to their nests, too. Nests are built in an open cup, in a cavity like a tree hole or birdhouse, a scrape in sand on a beach, or a hanging basket weaved with their beak, to name just a few. Most birds in Missouri build an open-cup nest, nest in tree cavities, or nest on the ground. These nests were all found as part of research studies in Missouri.



White-eyed vireo

Carolina chickadee nestlings in a nest box



MELISSA ROACH



NOPPADOL PAOTHONG

Killdeer



Mourning dove



ALLISON COX

Red-bellied woodpecker
at its nest cavity



NOPPADOL PAOTHONG

Ruby-throated
hummingbird



nest may not seem like a big deal to us, but the birds chose that nesting location for a reason.

Take Notes

As long as you keep a respectful distance, nest monitoring can be fun for adults and children alike. Just like humans are in the womb for about 40 weeks, each bird species spends a specific amount of time in the egg before hatching and in the nest as nestlings before flying. Some birds, like ducks and geese, are ready to leave the nest right when they hatch, but songbirds, like robins, are blind and naked when they hatch, and very helpless. Robins spend 12–14 days in the egg before hatching, and another 14–16 days in the nest before flying.

Make a monitoring calendar and write down when you see activity at the nest — building, incubating, or feeding. Record if the female or male came to the nest. Male robins have darker heads than the paler females. Note how many nestlings you can see when they are big enough to poke their heads out of the nest, and try to guess what day they will fledge.



The author
takes notes on
nest-building
behavior of a
female Acadian
flycatcher.

Birds Are Awesome

Nests and the breeding season are fascinating. Open-cup nesting birds like robins use their beaks to craft a perfectly circular nest by pasting together grass or twigs with spiderwebs or mud. Through the breeding season, birds throw every ounce of their energy into producing young, even if it means sacrificing their own health. They incubate eggs for long stretches of time. Once the eggs hatch, parents search for food to feed impatient nestlings, flying back and forth to the nest nonstop from sunrise to sunset. Not to mention having to defend the nest from predators and keep it clean and free of the nestlings' waste. It's always something special to watch a nest — just one tiny piece of a big, intricate network of nature happening all around us, in all habitats, across the globe. ▲

Sarah Kendrick is the state ornithologist in the Wildlife Division. She has a master's degree in avian ecology.

After the HARVEST

BY JAKE HINDMAN
PHOTOGRAPHS BY DAVID STONNER

Helping a young
hunter get her first
turkey from field to table



“DAD, CAN YOU HELP ME WITH THIS PART?”
My 6-year-old daughter, Hailey, was
uncertain of our next steps.

Moments earlier, working together, we had coaxed two adult toms into our decoys. They absolutely read the script: gobbling, strutting, and displaying to within less than 10 yards of our blind. Following a short fight with our fake jake, one of the gobblers offered Hailey a safe and ethical shot — her first turkey. The gobbler expired quickly, making a follow-up shot unnecessary. After unloading her shotgun with the muzzle pointed in a safe direction, we traded high-fives and hugs. Now she wanted to know if I had a plan to transform the 23-pound gobbler lying on the ground into a meal fit for a plate.







We approached the tom, and I began explaining the post-shot plan.

Stay Safe and Alert

Excitement and adrenaline peak when we take a shot at a turkey. I explained to Hailey that it is important to harness the excitement and ensure the next steps after the shot are carefully thought out.

Focus on firearm safety. Always keep the muzzle of your firearm pointed in a safe direction. Maintain control of the firearm the entire time and make sure the safety is reengaged after the shot. Depending on your shotgun action type, be aware of another shell sliding into the chamber — particularly for semi-automatic shotguns.

Prepare for a follow-up shot. In most cases, you won't need a follow-up shot, but you will want to be prepared for one, just in case. It is our responsibility as hunters to ensure shots are ethical and allow for a clean harvest. After you take the initial shot, watch the turkey's reaction. If the bird takes off running or flying and you are positive you hit the gobbler with the first shot, shoot again to dispatch it.

After the shot, Hailey looked back at me with excitement and curiosity, "Did I get it? I got it, right?!" Hailey had shot the bird exactly in the place we had practiced prior to season — the red wattles at the junction of the head and neck — and the gobbler was dead.

Approach your bird carefully. After you have determined the bird appears to be dead, you can begin your approach to the gobbler. Walk to the bird and keep firearm safety in mind. At this point, you will still need to be prepared for a follow-up shot. Once you are confident the gobbler is dead, unload your firearm. Before touching the turkey, be prepared for the carcass to flop, sometimes aggressively.

As I expected, Hailey's gobbler began flopping, which lead to a bit of confusion. "If the gobbler is dead, why is it moving?" I explained to Hailey that turkeys often flop after being shot even though the bird is actually dead. I cautioned her to watch out specifically for the tom's spurs, which can result in cut hands or legs if you aren't careful.

Follow the Regulations

I reminded Hailey that, similar to hunting other game such as deer, there are rules and regulations to follow when turkey hunting. We had covered the majority of these before turkey season began. Consult the most current turkey regulations at short.mdc.mo.gov/Z35 for details. In particular, pay close attention to the tagging and checking procedures.

Notch it. Once you have determined the bird is dead, it is now time to notch your permit. If you have a paper permit, as in Hailey's case, it will be marked with months on the side and days on the top. Make a small notch





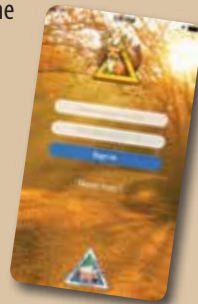
by tearing the paper or using a knife or something similar to clearly show you have notched the permit for the month and day of your harvest. If you don't have the permit printed, you can virtually notch your permit by using MDC's MO Hunting App. Once your permit has been notched, you can officially transport your gobbler from the place of harvest.

Tag it if you leave it. If you will not be in the immediate presence of your turkey at any time before Telechecking it, you will need to attach the notched permit to the bird. Put the notched permit inside of a sealable plastic bag and attach it to the bird's leg using zip ties, wire, or rope. If you're using the MO Hunting App, and you leave the bird, you must attach a label with your full name, address, permit number, and date of harvest to the turkey's leg.

Check it. All harvested turkeys are required to be Telechecked by 10 p.m. on the day of the harvest. You can complete the Telecheck process over the phone, on the internet, or even through the MO Hunting App. Hailey notched her permit, placed it on the gobbler's leg, and helped me with the Telecheck phone call. If you're using a paper permit, make sure to write the confirmation number on the permit in the space provided. On the app, the confirmation number will be automatically uploaded to your account when the Telecheck process is complete (this may take up to 20 minutes).

Free MO Hunting App

Use your smartphone to purchase, view, and store annual hunting permits. You can even use it to notch your permit and Telecheck your harvest directly from your permit within the application. Get it in Android or iPhone platforms at short.mdc.mo.gov/ZoQ.



Preserve Memories of the Hunt

Two of the best ways to commemorate your wild turkey harvest are through photography and taxidermy. We took a number of photos of Hailey with her gobbler, and we later used one of them in her First Turkey Certificate.

"Should we get a full-body mount of your first turkey?" I asked after our photo session.

"Yes!" she said.

If you are having a full body mount done, as in Hailey's case, the taxidermist will skin the bird and provide you with the meat. This

will ensure the feathers remain in quality condition for a mount.

If you're not having a full body mount done, consider saving the beard, spurs, and tail fan as mementos.



First Turkey Certificate

To create Hailey's First Turkey Certification, we downloaded MDC's customizable form at short.mdc.mo.gov/Z3S.



Bag Your Bird for Safe Transport

Getting a turkey home can prove a bit of a challenge, especially if you are a long distance from your vehicle. Large, hunter-orange game bags or vests specifically made for carrying wild turkeys can make the task easier and safer.

In addition, always wear a hunter-orange cap and vest when carrying your harvested bird to your vehicle. Using hunter orange can help you avoid being mistaken for game by other hunters.

My turkey-hunting vest worked great to carry Hailey's gobbler back to the truck. Because we had settled on a full-body mount, we were extra careful with the feathers when we loaded her bird into an orange game bag and then placed the bundle in the back portion of my vest.

Prepare Your Turkey for the Table

Although the taxidermist took care of cleaning Hailey's first turkey, this won't always be the case. On a future hunt, we will practice cleaning her harvest. Since wild turkeys have over 5,000 feathers, skinning is definitely our method of choice.

Clean the Bird

- 1 Clean the turkey as soon as possible after harvesting, keeping the meat clean and cool. Lay the gobbler on its back. Find the top of the breast bone, or keel, and make a small incision. Grab the skin on the bird near the incision and pull it off both breasts.



- 2 Run your knife along the keel on each side to remove both breasts.



- 3 Continue to pull the skin until the thigh meat is exposed. Cut the entire leg/thigh from the bird at the bone socket.



- 4 Remove the remaining skin on the leg and thigh. Repeat process for other leg and thigh.



- 5 Properly dispose of the remaining carcass, entrails, and feathers.

- 6 If not cooking immediately, freeze the meal-sized portions in freezer safe bags.



If you'd rather pluck your bird, proceed as you would for plucking chickens.

Make a Meal

Once the turkey is cleaned, you're ready to cook. Many recipes that work for domestic turkey and chicken, particularly the breasts, will work for wild turkeys.

With Hailey actively participating in the post-shot process, her anxiety quickly turned to curiosity. We successfully called in a tom, made a clean and ethical harvest, and prepared the bird for mounting as well as for

the table. Her after-the-harvest work paid off with a tasty wild turkey meal shared with family and friends. ▲

Jake Hindman, outreach and education district supervisor in the St. Louis Region, enjoys spring wild turkey hunting, particularly mentoring new wild-turkey hunters.

Wild Turkey Legs Three Ways

Many people save only the breast from wild turkeys, but the legs and thighs are delicious, too. Following a simple crock pot preparation, here are three ways to prepare wild turkey legs and thighs.

Base Preparation Split the leg from each thigh and place them on the bottom of the crockpot. Cover the legs and thighs with 28 ounces cream of chicken soup and 28 ounces of milk. Add water until all of the meat is covered. Cook on high for 8 hours or until meat is tender and pulls easily from bones and tendons. Remove meat, cool, and pull all bones and tendons from leg and thigh meat. Chunk up the meat and prepare one of the following ways.



Turkey Legs and Gravy

Serve the leg and thigh meat with brown gravy, mashed potatoes, and a vegetable.



Turkey Noodle Soup

Cook 1 cup of chopped carrots, ½ cup of diced onion, and 2 cloves of finely chopped garlic in 1 tablespoon of olive oil for 5 minutes, stirring occasionally. Mix in 2 cups of wild turkey leg and thigh meat, 2 cups of uncooked egg noodles, 5¼ cups of chicken broth, ¼ teaspoon pepper, 1 tablespoon parsley, and 1 dried bay leaf.



Barbecued Turkey and Cheese Sandwiches

Shred leg and thigh meat and mix with your favorite barbecue sauce. Place the meat on bread slices with a layer of pimento cheese spread. Butter the bread and grill the sandwiches until golden brown on both sides.



For more wild turkey recipes, visit short.mdc.mo.gov/Z3q.

Eastern Cottontail Rabbit

EVERY YEAR FROM spring to mid-summer, my dogs stumble upon a rabbit's nest or two in my backyard. Luckily, my dogs leave the baby rabbits alone, so no harm has befallen them. Last summer, I became curious about these little creatures. How do they grow so fast, seemingly without an adult feeding them or tending to their needs?

I decided to answer my own question with a camera system, equipped with a motion detector and four wireless flash units, set up just to the right of the rabbit's nest. I anxiously waited for the next morning to see the results. But it was another five days before I finally captured images of an adult female rabbit nursing her babies.

The eastern cottontail rabbit (*Sylvilagus floridanus*) has long ears, large hind legs, shorter front legs, and it features a distinctive fluffy, cotton-ball tail for which it is named. The cottontail is a medium-sized rabbit, weighing about 2–3¼ pounds, with a length of 14–19 inches. The color of its upper coat varies from reddish- to grayish-brown, while its under coat is grayish-white.

They are fairly common in Missouri. However, numbers have been declining since 1955 due to habitat loss. Eastern cottontails are found near farms, typically in and around fields, pastures, and open woods. Seldom found in deep woods, cottontails forage in open areas and use brush piles, shrubby plants, and burrows or dens for escape, shelter, and resting cover. They do not dig their own dens (other than nest holes), but use burrows dug by other species, such as woodchucks. Cover is extremely important for the survival and abundance of eastern cottontails. They are also found in suburban areas if adequate food and cover are near.


Rabbits feed almost entirely on plants. The three most preferred foods are bluegrass, wheat, and white clover. During winter, cottontails travel greater distances and eat buds, twigs, bark, and sprouts of shrubs, vines, and trees to survive. They are also fond of garden fare, such as peas and lettuce.

Breeding season is from mid-February through September. Males will mate with more than one female. A female could produce five litters per year, with one to 12 young, called kits, per litter. Most nests are about 5 inches in height on average and are concealed in grasses or weeds lined with fur.

Kits are born completely blind with a very fine coat of hair. Their eyes begin to open after four to seven days. They begin to move out of the nest by 12 to 16 days, and are completely weaned and independent by four to five weeks. Females do not stay in the nest with the kits, but return to the nest to nurse them, usually twice a day.

After several trials and errors, I finally was able to capture images of an adult female cottontail rabbit nursing her babies at 2 a.m. She paid no attention to my camera as it continued to shoot, capturing some of the most intimate moments of a mom tending to her babies. The female nursed her babies for a good 10–15 minutes, and covered the nest back with fur before leaving them alone for the next day. It gave me a new perspective on nocturnal animals and their secretive life.

—Story and photograph by Noppadol Paothong

 10–22mm lens • f/16 • 1/250 sec • ISO 800



We help people discover nature through our online Field Guide.

Visit mdc.mo.gov/field-guide to learn more about Missouri's plants and animals.



Big Cane Conservation Area

This 2,154-acre area in southern Butler County is a remnant of the once-vast bottomland forests of lowland southeast Missouri. It provides excellent wildlife habitat and an easy way to view wetland wildlife and explore an unusual landscape.

BIG CANE CONSERVATION Area is an excellent example of what much of the lowlands of southeast Missouri once looked like — a seasonal wetland bottomland forest. These once-vast forests were flooded for much of the winter and spring, then dried out for most of the growing season and into early fall.

Spring is a good time to visit Big Cane, as much of the lower elevations of this forested area may be flooded. While most of the migratory waterfowl will have migrated north already, resident wood ducks can be seen and heard along the many sloughs and depressions scattered throughout the area. The return of Neotropical migrant songbirds that rely on forests for foraging and nesting also occurs at this time. By late April, prothonotary warbler, yellow-billed cuckoo, Acadian flycatcher, eastern wood-pewee, and red-eyed vireo songs can be heard throughout the forest canopy. Binoculars are essential if you're hoping to spot these birds in the canopy.

Spring also brings the call of spring peepers and other frogs and amphibians from the many sloughs and shallow wetland ponds on the area. In the early 2000s, five shallow depressions were added to existing amphibian and reptile habitats to provide additional hospitable environments. The bottomland forest on the area is a forest lover's dream. Many tree species are found here, including pin oak, Nuttall oak, willow oak, overcup oak, water oak, swamp chestnut oak mixed with



📷 24–85mm lens • f/5.6 • 1/60 sec • ISO 200 | by Mark Pelton

hickories, maples, ash, sweetgum, and bald cypress. The forest is dominated by red oak species, which provide an abundance of acorns that are very important for wildlife food. Unfortunately, bottomland red-oak species have proven difficult to grow back in bottomland forests. A forest research project is underway on the area to study red-oak regrowth after varying levels of tree harvest. Part of the project also monitors songbird populations, both pre- and post-tree harvest, to determine if the increased complexity of the forest canopy after harvest appears to be beneficial.

The bottomland forests of Big Cane CA provide excellent habitat for swamp rabbit, wild turkey, deer, squirrel, and other less common species.

—Mark Pelton, area manager



Big Cane Conservation Area

Recreation Opportunities: Hunting, wildlife and bird viewing, nature photography, hiking, and drive-through area viewing

Unique Features: Seasonal wetland bottomland forest with many permanent wetland sloughs, wetland pools, and wetland depressions scattered throughout

For More Information: Call 573-840-9788 or visit short.mdc.mo.gov/Z3L



MDC DISCOVER nature

To find more events near you, call your regional office (phone numbers on Page 3), or visit mdc.mo.gov and choose your region.

NATIVE PLANT SALE AND WORKSHOPS

APRIL 1 • SATURDAY • 9 A.M.–2 P.M.

*Southwest Region, Springfield Conservation
Nature Center, 4601 S. Nature Center Way,
Springfield, MO 65804*

*No registration required, call 417-888-4237
for more information*

Adults

Plants will be available for purchase from a variety of vendors, and conservation-friendly information will be available from exhibitors. A series of guest speakers will be discussing topics related to native plants throughout the day in the auditorium.

ADVENTURE BIRDING: A “BIRDS AND BLOOMS” TREK

APRIL 8 • SATURDAY • 7 A.M.–4 P.M.

*Central Region, Runge Conservation Nature
Center, 330 Commerce Drive, Jefferson City,
MO 65109*

*Registration required, call 573-526-5544
beginning April 1*

*Ages 11 years and older, children must be
accompanied by an adult*

Clifty Creek Conservation Area, on the Great Missouri Birding Trail, is a favorite hot spot for many birders. Join us for a trek among the birds and blooms. There will be spring wildflowers, migrant birds, and maybe some

other critters, too. Bring a lunch, water, snacks, sunscreen, and insect repellent. Wear sturdy shoes, dress for the weather, and bring your binoculars. We will meet at Runge, and transportation will be provided.

DISCOVER NATURE — FAMILIES: .22 RIFLE SHOOTING BASICS

APRIL 8 • SATURDAY • 8:30–11:30 A.M.

*Southwest Region, Andy Dalton Shooting
Range and Outdoor Education Center,
4895 N. Farm Road 61, Ash Grove, MO 65604*
Registration required, call 417-742-4361

All ages

Join us to discover the joys of shooting a .22. We will discuss rifle nomenclature, dominant eye, sight picture, sight alignment, breath control, trigger squeeze, shooting positions, and much more. You may use our rifles or your own. If using your own, make sure your rifle is completely unloaded before you arrive at the range.

GO NATIVE

APRIL 15 • SATURDAY • 9:30 A.M.–2:30 P.M.

*Kansas City Region, Anita B. Gorman
Discovery Center, 4750 Troost Ave.
Kansas City MO 64110*

No registration required

All ages

Learn about the wide variety of native plants to suit your landscaping needs.



IDEAS FOR FAMILY FUN

DISCOVER NATURE — FISHING: LESSON 1

APRIL 15 • SATURDAY • 1–3 P.M.

*Northeast Region, Adair County Public
Library, 1 Library Lane, Kirksville, MO, 63501*
*Registration required, call 573-248-2530
by April 14*

All ages, families

Learn about fishing equipment, techniques, and how to cast with a rod and reel.

EARTH DAY IN FOREST PARK

APRIL 22 AND 23

SATURDAY AND SUNDAY • 11 A.M.–5 P.M.

*St. Louis Region, Forest Park,
5595 Grand Drive, St. Louis, MO 63112*

No registration required

All ages

Earth Day in Forest Park brings together over 60,000 people a year, making it the second largest Earth Day event in the nation. Visit the Missouri Department of Conservation booth. A native tree seedling and children's craft is offered to Earth Day attendees. Visit stlouisearthday.org for more information.

FEATHERED FRIENDS

APRIL 29 • SATURDAY • 1–4 P.M.

*Southeast Region, Cape Girardeau
Conservation Nature Center, 2289 County
Park Drive, Cape Girardeau, MO 63701*

*No registration required, call 573-290-5218
for more information*

All ages, families

It's a bird, it's a plane, no wait . . . it is a bird! See live hawks and owls, learn how to identify birds, enjoy bird activities, and take home a bird craft at our birdtastic event! Bird presentations at 1:30 and 2:30 p.m.



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I Am Conservation

Missouri citizens are crucial partners in the department's efforts to protect the state's fish, forest, and wildlife resources. Sam Hardy (left), St. Peters, and Jeff Batemen, western St. Charles County helped MDC gather critical information about lake sturgeon and confirmed, for the first time, that the fish naturally reproduce in the wild. The species was nearly extinct in the state, and, in 1984, in hopes of spurring recovery, MDC staff began to raise them in department hatcheries and release the fingerlings into Missouri rivers. It takes the fish up to 30 years to reach reproductive maturity, so when Hardy called to report seeing what looked like spawning activity while out paddlefish snagging, MDC biologists were very excited. "We had never before been able to confirm lake sturgeon spawning in Missouri," said MDC Fisheries Management Biologist Travis Moore. "But Sam's report was timely and we were able to get staff there to confirm hatching of eggs at that site." Moore emphasized the importance of citizen reports. "Missouri is home to thousands of miles of rivers and streams," said Moore. "MDC staff can't be everywhere, so we have to rely on reports from the public." Batemen's report of a lake sturgeon in Dardenne Creek was very helpful to researchers in tracking lake sturgeon movement. "We just didn't expect a lake sturgeon to be over 30 miles up this small stream," said Moore. —*photograph by Noppadol Paothong*